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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/361,803	07/27/1999	MITSUHIRO KUNIEDA	35.G2440	5976

5514 7590 12/23/2003

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EXAMINER

RODEE, CHRISTOPHER D

ART UNIT PAPER NUMBER

1756

DATE MAILED: 12/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/361,803	KUNIEDA ET AL.	
	Examiner	Art Unit	
	Christopher D RoDee	1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 November 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 11, 12 and 14-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11, 12, and 14-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 11, 12, and 14-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pai *et al.* in US Patent 6,025,102 in view of *Organic Photoreceptors for Imaging Systems*, to Borsenberger, pp. 330-338, and further in view of JP 01-84265, or Kawamorita *et al.* in US Patent 5,202,214, or Kovacs in US Patent 5,373,313.

This rejection was applied in the last Office action and the finding of fact and conclusions of law presented there are incorporated here. The pending claims remain as previously presented and, thus, the rejection of the claims remains applicable for the reasons of record.

Applicants traverse the instant rejection because the primary Pai reference is not concerned with the problems of the instant inventors, particularly the partial accumulation of excitons and charge carriers generated by short wavelength irradiation having high energy. This accumulation changes the charging and sensitivity characteristics of the photosensitive member. The inventors have discovered that this accumulation can be suppressed by an electron transfer reaction with a specific charge transport material, as claimed. The use of coherent short wavelength semiconductor light for imaging of the photosensitive with the specific charge transport material alleviates imaging problems such as potential variation and image defects. The claimed process cartridge and apparatus include the photosensitive member having the requisite charge transport material and a semiconductor laser exposure source having a wavelength of 380 to 500 nm.

Applicants note that the prior art Pai reference fails to disclose or suggest short wavelength semiconductor laser light for imaging. Pai uses monochromatic light not coherent light. Applicants state that it was conventional to initially use non-coherent light and pass this light through a filter to make it monochromatic. This type of light is not "coherent" and is different in kind from the high energy semiconductor laser. Even with similar wavelengths, the short wavelength semiconductor laser has much larger energy than polarized halogen light. This difference in energy is what degrades the charge generation material and is the problem of concern for the instant inventors. Thus the light source of the claims is different not only in wavelength but also in energy. The supporting references teachings are noted in the response, but Borsenberger is singled out for not teaching semiconductor laser light, and the other supporting references are discussed as only teaching certain semiconductor lasers effective at certain wavelengths.

The Examiner has given careful consideration to applicant's remarks. Initially the Examiner must note that the process cartridge claims (i.e., 11 and 14-17) do not include the semiconductor laser source. In the process cartridge claims the laser is part of the apparatus the process cartridge is mountable to and detachable from. The apparatus and its exposure source are not present in the process cartridge claims. These claims are rendered obvious by the prior art because the prior art discloses each required structural component of the claims. Further, the process cartridge does not appear to have any particular structure because of its design to be mounted to an apparatus having the specific exposure source. If the exposure source adds a specific structural limitation to the process cartridge that is not readily apparent from the recited cartridge elements applicants are asked to specify. Thus, applicants' remarks are not pertinent to the process cartridge claims because they do not include the exposure source referenced in the remarks.

With respect to applicants' comments concerning Pai as they may be applicable to the claims of record, the Pai reference in a preferred example does expose the photosensitive member of that invention to monochromatic light of a known intensity. The reference states,

"The charge transport layer should exhibit negligible, if any, discharge when exposed to a wavelength of light useful in xerography, e.g. 4000 Angstroms to 8000 Angstroms. Therefore, the charge transport layer is substantially transparent to radiation in a region in which the photoconductor is to be used. Thus, the active charge transport layer is a substantially non-photoconductive material which supports the injection of photogenerated holes from the generation layer."

The artisan considering this disclosure would have sufficient reason to use a wavelength in the noted range and to use an exposure source, such as taught by the supporting art, which produces, as a possibility, monochromatic light in the area of sensitivity of the charge generation layer and area of transparency of the charge transport layer. The reference does not exclude the use of coherent light by its disclosure of monochromatic light in the example and the noted wavelengths in the general disclosure. The noted example provides one possible embodiment for the exposure source of the reference but the Pai reference considered as a whole clearly teaches that the wavelength of exposure is critical. This is because the photosensitive layer (e.g., charge generation material) must absorb light in its area of sensitivity in order to generate charge carriers. The supporting references each disclose a semiconductor light source for imaging electrophotographic elements that would have been expected to be effective in Pai because this source has the requisite wavelength and is taught as effective in Pai's field of endeavour. The supporting art thus contradicts applicants' position that it was conventional, or at least exclusively so, to initially use non-coherent light and pass this light through a filter to make it monochromatic. Clearly, semiconductor lasers were used to image electrophotographic imaging members at the noted wavelength. Lasers are also typically monochromatic. Further,

the artisan would also have been motivated by Pai to provide sufficient energy to the known semiconductor laser light source so that it generates charges in the imaging member. However, the artisan would reasonably have been expected to control the strength of the exposure so that it does not damage the imaging member as it would not accurately reproduced images if damaged. The claims do not specify the amount of energy produced by the light source and thus include all possible exposure sources with all possible energies that would be effective in an electrophotographic imaging apparatus and process cartridge. The claims thus include the semiconductor lasers taught by the supporting art, which produce sufficient energy to produce charge carriers in their imaging elements at the noted wavelengths.

With respect to applicants' other major point, the problem of the instant inventor is a concern in the evaluating the prior art and making the obviousness determination but the art need not recognize applicants' concerns in order for the Examiner to establish a *prima facie* case of obviousness. As long as the art reasonably suggests the claimed invention, obviousness can be the proper conclusion. In the instant situation, the Examiner has provided sufficient evidence, motivation from the art, and a well reasoned legal determination to render the claims obvious at the time the instant invention was made. Further there appears to be no evidence of record to show that the partial accumulation of excitons and charge carriers generated by short wavelength irradiation having high energy is a problem in the invention of Pai using light sources with wavelengths as taught by the prior art.

The rejection is seen as proper and is maintained for the reasons of record and the reasons given above.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher D RoDee whose telephone number is 571-272-1388. The examiner can normally be reached on most weekdays from 6 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0661.

cdr  
15 December 2003



CHRISTOPHER RODEE  
PRIMARY EXAMINER